U.S. Army Research Institute
for the Behavioral and Social Sciences

Research Report 2008

Strategies for Stimulating Discussion

Michelle Wisecarver and Cory Adis
Personnel Decisions Research Institutes

LisaRe Brooks Babin
U.S. Army Research Institute

John Otis Smyers
Kansas State University
Consortium Research Fellows Program

Tim Hope and Scott Pritchett
Whitney, Bradley, & Brown, Inc.

June 2017

U.S. Army Research Institute
for the Behavioral and Social Sciences

Department of the Army
Deputy Chief of Staff, G1

Authorized and approved for distribution:

MICHELLE SAMS, Ph.D.
Director

Research accomplished under contract
for the Department of the Army

Personnel Decision Research Institutes

Technical review by

R. M. Meinhart, U.S. Army War College

Angela Karrasch, U.S. Army Research Institute

NOTICES

DISTRIBUTION: Primary distribution of this Research Report has been made by ARI. Please address correspondence concerning distribution of reports to: U.S. Army Research Institute for the Behavioral and Social Sciences, Attn: 6000 6th Street, Fort Belvoir, Virginia 22060.

FINAL DISPOSITION: This Research Report may be destroyed when it is no longer needed. Please do not return it to the U.S. Army Research Institute for the Behavioral and Social Sciences.

NOTE: The findings in this Research Report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

REPORT DOCUMENTATION PAGE

1. REPORT DATE (dd-mm-yy)	2. REPORT TYPE	3. DATES COVERED (from. . . to)
June 2017	Final	Oct 2013 to February 2015

4. TITLE AND SUBTITLE	5a. CONTRACT OR GRANT NUMBER
Strategies for Stimulating Discussion	W911NF-13-C-0091
	5b. PROGRAM ELEMENT NUMBER 622785

6. AUTHOR(S)	5c. PROJECT NUMBER
Wisecarver, M., Adis, C. (Personnel Decisions Research Institutes) Babin, L.B. (U.S. Army Research Institute) Smyers, J.O. (Kansas State University; Consortium Research Fellows Program) Hope, T., Pritchett, S. (Whitney, Bradley, & Brown, Inc.)	A790
	5d. TASK NUMBER
	5e. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)	8. PERFORMING ORGANIZATION REPORT NUMBER
Personnel Decisions Research Institutes 1777 North Kent Street, Suite 401 Arlington, VA 22209	

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. MONITOR ACRONYM
U. S. Army Research Institute for the Behavioral & Social Sciences 6000 6th Street, Fort Belvoir, VA 22060 ATTN: Ft. Leavenworth Research Unit 851 McClellan Ave, Building 90 Fort Leavenworth, KS 66027-1360	ARI-FLRU
This doesn't make sense.	11. MONITOR REPORT NUMBER Research Report 2008

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited.

13. SUPPLEMENTARY NOTES
ARI Research POC: LisaRe Brooks Babin,

14. ABSTRACT *(Maximum 200 words)*:
Despite the importance of discourse in professional military education and operational settings, little guidance exists within the military to identify best practices that instructors and leaders should apply when engaging in classroom discussion. A review was conducted of information available regarding the application of discussion methods in educational settings as a primer for stimulating discussion. There were 24 dialogic classroom discussion exercises identified in the literature that differed with respect to several characteristics: the extent to which they forced participation, the level of structure they provided, and whether they incorporated written activities or thinking time in the exercise. Prescriptive guidance was not available that describes a specific formula or method to use in selecting a discussion exercise structure for a given class situation. Elements to consider, however, involve selecting an approach to the exercise that: (1) facilitates achieving the identified objectives, (2) considers the characteristics of the participants, and (3) develops a culture and climate in the class that supports useful discussion and rewards appropriate contributions. Thirteen best practices for conducting discussion that develops necessary skills for discourse were identified and discussed.

15. SUBJECT TERMS
Classroom discussion; Adult learning; Discourse

			19. LIMITATION OF ABSTRACT	20. NUMBER OF PAGES	21. RESPONSIBLE PERSON
16. REPORT	17. ABSTRACT	18. THIS PAGE			
Unclassified	Unclassified	Unclassified	Unlimited	41	Angela Karrasch (913) 684-9758

Research Report 2008

Strategies for Stimulating Discussion

Michelle Wisecarver
Cory Adis
Personnel Decisions Research Institutes, Inc.

LisaRe Brooks Babin
U.S. Army Research Institute
for the Behavioral and Social Sciences

John Otis Smyers
Consortium Research Fellows Program
Kansas State University

Tim Hope
Scott Pritchett
Whitney, Bradley, & Brown, Inc.

Fort Leavenworth Research Unit
Angela Karrasch, Chief

U.S. Army Research Institute for the Behavioral and Social Sciences
6000 6th Street, Fort Belvoir, VA 22060

June 2017

Army Project Number
622785A790

Personnel, Performance
and Training Technology

ACKNOWLEDGMENTS

We would like to thank all of the Army leaders who participated in meetings during this research, including officers, instructors, and staff at the U.S. Army War College, particularly Dr. Meinhart and COL Cheeseborough. We would also like to thank Dr. Angela Karrasch who determined this research was necessary and Dr. James Lussier from ARI who provided helpful reviews of earlier drafts of this report and overall guidance to the research.

EXECUTIVE SUMMARY

Research Requirement:

The Army's success in countering current and future adversaries requires a capacity to learn and adapt quickly. The U.S. Army Learning Concept for Training and Education 2020-2040 (U.S Department of the Army, 2017) emphasizes the need to enhance the rigor and relevance of individual learning and continue to be open to inventiveness, input of learner knowledge, and advances in learning technologies and methods. Passive instruction based on lectures can convey basic facts and information about a topic, but it does not actively engage learners nor does it make use of their prior experience. Engaging in critical discussion can do both and has been shown to increase the retention of information when compared to passively listening to a lecture. Soldiers have a wealth of operational experience they can contribute during discussions to increase peer-based learning. Discussion also facilitates critical thinking needed for productive discourse. Not only is discussion an important tool in professional military education (PME), it is important in on-the-job settings as well – such as during planning meetings, after action reviews (AARs), and other interactions and problem solving settings. Despite the importance of quality discussion in PME as a skill building precursor for discourse in operational settings, little guidance exists within the military to identify best practices that instructors and leaders should apply when stimulating discussions as a means to develop the necessary skills needed for professional Soldier development.

Procedure:

A literature review was conducted on the available information regarding the application of discussion methods in educational settings. Various terms, definitions, methods, and strategies for stimulating discussions in educational settings were identified from military and nonmilitary sources. Topics were reviewed that included: (1) the role of discussion objectives in identifying strategies, (2) the impact of personal and interpersonal characteristics on discussion, and (3) methods for assessing and evaluating discussion. The information was then used to delineate approaches for stimulating and maintaining a quality discussion as an antecedent for future discourse. A series of best practices for discussion in educational settings was developed based on the methods and ideas identified in the literature.

Findings:

A number of factors were identified that impact discussion, such as clearly identifying the learning objectives for the discussion, matching the discussion structure to the learning objectives, and considering participant characteristics. The review of the literature found 24 dialogic classroom discussion exercises applied in various educational settings. These exercises differed with respect to several characteristics: the extent to which they forced participation, the level of structure they provided, and whether they incorporated written activities or thinking time. These are factors to consider when selecting a structure for discussion in a PME setting.

Prescriptive guidance was not available that describes a specific formula or method to use in selecting a discussion exercise structure for a given class situation. Elements to consider, however, involve designing an approach to the discussion that: (1) facilitates achieving the identified objectives, (2) considers the characteristics of the participants, and (3) develops a culture and climate in the class that supports useful discussion and rewards appropriate contributions. Thirteen best practices for conducting quality discussion were identified and discussed.

Utilization and Dissemination of Findings:

Findings from this research can be applied directly to professional military education settings that utilize discussion as a tool for learning. The tools described in this report can also be applied in training or real world settings where discourse is required, including planning or problem solving meetings as well as after action reviews. The findings offer insight regarding the essential elements of discussion needed for a broader discourse, but future research should identify specific qualities of discourse that make it productive in solving problems successfully. The findings also provide a foundation to determine what methods of stimulating discussion leaders can use to leverage to improve their effectiveness in building relationships, leading effective collaboration and teaming efforts, and engaging in group problem solving in real world joint and multinational training and operational activities. In coordination with Dr. Meinhart, the findings were disseminated to the U.S. Army War College. In addition, the report was transitioned to Dr. Ted Thomas, Director of the Department of Command and Leadership.

CONTENTS

Page

Strategies for Stimulating Discussion

It is late afternoon and the officers file back into their staff group classroom following a compelling presentation on leadership challenges from a recently deployed commander. The section instructor opens the floor for discussion. One voice shoots out for the first comment. He always has something urgent to say…it does not seem to matter the topic. If there was an award given at the end of the course for having the most to say during discussion, he would definitely win. Predictably, two others who are also very vocal offer their comments next. As is often true, they disagree with each other on a number of points and a debate ensues. Others in the class watch the battle unfold with slight boredom, checking their watches and waiting for the remainder of the session to expire. The instructor breaks in to ask for other opinions on the topic, but some have already checked out of the discussion. A few additional comments are made, and the class breaks for the afternoon.

A classroom discussion such as the one above seems to provide a soapbox or debate forum for a few outspoken people, rather than eliciting a broad consideration of multiple perspectives across the students in the class. Beyond the standard lecture approach to teaching in a classroom setting, discussion is one of the most popular classroom teaching methods and its use cuts across every level of learning from elementary school through graduate school, as well as in adult learning settings such as Army leader education. The Army currently trains and educates Soldiers and Civilians from diverse backgrounds through career-long learning opportunities where some form of discussion is a key element of military activities (U.S Department of the Army, 2017). While passive instruction based on lectures can convey basic facts and information about a topic, it does not always engage learners or make use of their prior experience. Engaging in discussion, on the other hand, can do both and may increase their retention of information when compared to listening to a lecture (e.g., Bowman, 2002; Bransford, 1979; Ewens, 2000; Huang, 2005; Mainkar, 2008). This, in part, is because students are able to make meaningful connections and either relate or disagree with what is being said, both of which contributes to a deeper processing of information.

Discussion facilitates peer-based learning in the classroom because Soldiers have a wealth of operational experience they can contribute during discussions to provoke a greater amount of thought on a topic than passive lecturing allows. Life experiences are a rich resource for adult learners (Knowles, 1980; Knowles, Holton, & Swanson, 2015; Merriam & Bierma, 2014), something that Lindeman (1961) likens to a “living text-book” (p.7). As Kidd (1973) describes, adults not only have more experiences than younger learners, they have different kinds of experiences and their experiences are organized in different ways. Adults learn effectively when their existing knowledge is activated prior to learning something new (U.S. Department of the Army, 2017), and discussion can be a mechanism to do that. Discussion can provide the opportunity for collaborative learning which has been shown to enhance critical thinking (Gokhale, 1995). It is also an important element in the Command and General Staff College (CGSC) Experiential Learning Model, which emphasizes the need to incorporate a variety of delivery techniques for teaching (Kem, 2015; USACGSC, 2005).

Not only is discussion an important tool in professional military education (PME) (Joint Chiefs of Staff, 2012), it is important in operational settings as well – such as during planning

meetings, after action reviews (AARs), and group problem solving activities (e.g., see Karrasch & Gunther, 2014; Mastaglio, Wilkinson, Jones, Bliss, & Barnett, 2011). This report reviews information available regarding the application of discussion methods in educational settings, identifies strategies for encouraging a good discussion, and extracts a series of best practices for productive discussion from the literature. The report begins with a clarification of the various terms and definitions that are used to refer to discussion.

Understanding Discussion

On the surface, the meaning of the term *discussion* seems apparent; yet upon deeper reflection it becomes difficult to differentiate it from similar terms such as conversation, dialogue, and discourse. Discussion is formally defined by Merriam-Webster (2014) as the "the act of talking about something with another person or a group of people: a conversation about something". The definitions of related terms are very similar. Discourse, for example, is defined as "verbal interchange of ideas, especially: conversation." (Merriam-Webster, 2014). Dialogue is also described as a conversation, specifically: "a conversation between two or more persons; an exchange of ideas and opinions" (Merriam-Webster, 2014). Finally, a conversation is defined as "an informal talk involving two people or a small group of people; the act of talking in an informal way" (Merriam-Webster, 2014).

While these terms often remain undefined and overlapping in the literature, some educational researchers have highlighted the importance of defining them and the usefulness of differentiating among them (e.g., Askell-Williams & Lawson, 2005). Bridges (1988) and Dillon (1994), for example, suggest that a conversation is informal and aimless; whereas a discussion is more serious and requires that participants are mutually responsive to each other. Discourse, on the other hand, is typically used in the education literature to refer to all communication and interaction within the classroom, and not a specific exercise used during class (e.g., see Griffin, League, Griffin, & Bae, 2013; Lam, Law, & Shum, 2009; Linell, 1998; Ryve, Larsson, & Nilsson, 2013). Discussion is the term typically used in the literature to refer to a specific exercise conducted in class that involves verbal interaction.

These distinctions in the education literature are mirrored by Meinhart (2014) in seminar documentation for the U.S. Army War College. Meinhart uses the term discourse to refer to all types of verbal interaction that occur in seminar, and identifies conversation, discussion, and dialogue as subcategories of discourse (Meinhart, 2014). In his description, Meinhart (2014) uses the term conversation to refer to the most basic type of discourse, in which individuals are informally communicating and sharing thoughts and feelings in an unstructured manner. Alternatively, discussion is described as more structured and serves to move the seminar to closure on a given issue, and dialogue refers to a verbal interaction that is more exploratory than discussion and emphasizes inquiry, or a deeper probe. Further, in his writings on learning organizations, Senge (1990) defines dialogue as a free and creative exploration of ideas that promotes learning. The question of the precise term that is used to refer to each type of verbal interaction may seem somewhat academic. Meinhart, however, aligns the different terms with the level of cognitive insight each type of interaction can provide, using Bloom's (1956, 1984) original taxonomy of educational objectives as benchmarks – knowledge, comprehension, application, analysis, synthesis, and evaluation. Using this alignment, engaging in conversation advances learning primarily at the lower levels of knowledge and comprehension, while

discussion flows learning to the levels of application and analysis, and dialogue advances learning to the highest levels, synthesis and evaluation. Discourse then can be thought of as all these components coming together on a meta-level to form a much more powerful tool for action. This alignment is conceptual, not empirical in basis, and in practice verbal interactions likely cycle somewhat fluidly between the different levels. Having this type of conceptual framework is useful, however, in that it can communicate the expectations for the outcome, processes, and context of different types of discourse.

In the section that follows, research findings regarding factors that impact discussion in the classroom are reviewed. Discourse will be used as a broad term to denote the use of any of a number of verbal interactions that could vary in their purpose and formality. Discussion will be used to describe verbal interaction exercises during class, the term typically used in the education literature to describe verbal interaction exercises.

Information gathered for this report is generally from the educational and training literature. The review focuses to the extent possible on materials related to adult learners. As a group, adult learners vary widely in personality characteristics, developmental stages, and reasons for learning. They are somewhat unique from younger learners because they are more likely to have a rich range of past experiences on which to draw, and they can use their experiences to create connections with new material (Brookfield, 2013). Knowles, Holton, & Swanson (2015) identify prior experience of the learner as one of the six key principles of andragogy for adult leaning, with the other five involving: (1) the learner's need to know, (2) self-concept of the learner, (3) readiness to learn, (4) orientation to learning, and (5) motivation to learn. Prior experience provides both a resource they can draw on as well as existing mental models that help organize and frame their learning. Adults also tend to take a highly problem-centered orientation to learning (Knowles et al., 2015). Despite the distinction between adult and younger learners, research will be referenced that sampled student populations (primarily college), given that research on adults in this domain as a whole remains rather sparse.

Factors Impacting Discussion

As demonstrated in the opening vignette, discussion in the classroom can at times serve as a "soap box" for a relatively small number of class members to debate their views or showcase their knowledge (e.g., Hollander, 2002; Madden, 2010). From another perspective, classroom dynamics may create a situation in which a small percentage of the students are consistently counted on by the rest of the class to do most of the talking (e.g., Karp & Yoels, 1976). Although not every classroom discussion is useful, research examining secondary student perspectives on discussion found that students viewed discussions as helpful to clarify information, see new points of view, make lessons more interesting, and compare oneself to others in the class (Askell-Williams & Lawson, 2005). In some cases, however, group discussion may serve mainly to perpetuate shared information that group members have, rather than illuminating unique information or perspectives and analyzing them critically (Strasser & Titus, 1985) which can lead to groupthink or blunt further curiosity about other perspectives. However, when done correctly discussion provides the opportunity to engage in a collaborative learning environment which has been shown to enhance critical thinking (Gokhale, 1995).

Identifying the Objectives of Discussion

The design of all training and educational materials should be anchored in the objectives and requirements that have been identified for a course (e.g., McGonigal, 2005; Sautter, 2007; U.S Department of the Army, 2011; USACGSC, 2005). Discussion can support achieving a wide variety of terminal learning objectives (TLOs) and enabling learning objectives (ELOs) across many different topics. This can range from the development of psychomotor skills, such as learning safety methods or steps (e.g., Fanning, 2011) to more analytical or problem solving skills. Brookfield and Preskill (2005) identify a variety of objectives that can be accomplished using classroom discussion as a technique, regardless of the topic. These include:

- Exploring a diversity of perspectives regarding the topic
- Recognizing and investigating assumptions regarding a topic
- Becoming more connected to a topic
- Developing skills of synthesis and integration

While each Army class or instruction will have unique TLOs and ELOs that include learning about specific Army doctrine, processes, and procedures relevant to a Soldier's level and branch, it is also important to consider that the overall objective of Army education is to develop leaders who can think, apply knowledge, and solve problems (U.S Department of the Army, 2011). Developing critical thinking in leaders is therefore an important objective across leader development and education opportunities, and it provides leaders with a skill they can apply operationally. Along these lines, the Army Learning Policy and Systems (U.S Department of the Army, 2011) indicates that it is important to design learning using strategies that foster critical thinking and problem-solving skills, as well as taking team-based, rather than lecture-based approaches. The Army encourages instructors to design classroom experiences to be collaborative problem-solving events led by instructors who facilitate students thinking about and understanding of the relevance and context of what they learn (U.S Department of the Army, 2017). The U.S. Army Learning Concept also emphasizes the importance of developing the identified future Soldier competencies, which include critical thinking and communication/ engagement (oral, written, and negotiation). While critical thinking is often listed as a PME course objective, the subsequent instruction provides primarily concepts and knowledge rather than skill practice (U.S Department of the Army, 2017). Engaging in discussion can not only help accomplish all of these objectives but can also contribute to building the communication and thinking skills necessary to engage in a productive discourse.

As a tool, discussion is well suited to facilitate critical thinking as well as a range of other Army educational objectives and competencies. Research suggests discussion may serve to increase depth of processing during learning activities, which increases retention (Craik & Lockhart, 1972). Discussion has been shown to promote higher level understanding, critical thinking, and problem solving (e.g., Bolton, 1979; Dallimore, Hertenstein, & Platt, 2006; Delaney, 1991; Ewens, 2000; Garside, 1996; Gilmore & Schall, 1996; Huang, 2005; McGonigal, 2005; Soter et al., 2008). Approaches that facilitate interactive and collaborative learning (i.e. discussion exercises) better enable higher level thinking activities such as analysis and evaluation (Goldsmith, 2014). In line with this concept, Huang (2005) suggests using Bloom's (1956, 1984) taxonomy of thinking skills as a useful tool to structure discussion topics and facilitate application, analysis, synthesis, and evaluation of information, a concept reiterated by Meinhart

(2014). Discussion is also useful to engage students in collaborative reasoning – a process in which students examine some type of unresolved issue that has multiple points of view to consider (e.g., Reznitskaya, 2012; Reznitskaya, Kuo, Clark, Miller, Jadallah, Anderson, & Nguyen-Jahiel, 2009; Zhang & Stahl, 2011). Discussions can enable students to benefit from others' expertise, reflect upon their own ideas, and internalize knowledge and thinking in a given discipline (e.g., Blumenfeld, Marx, Patrick, Krajcik, & Soloway, 1997; Bruer, 1996) This type of collaborative team work also provides students the experience of seeking out disparate information and synthesizing information together to form a narrative of their own as well as becoming a contributor to the discourse on a particular topic.

In addition to facilitating critical thinking and related cognitive skills, discussion also provides an opportunity to build communication skills, interpersonal, and social skills and an understanding of diverse perspectives (e.g., Brookfield & Preskill, 2005; Mainkar, 2008; Smart & Featheringham, 2006). Bolton (1979) identified five key clusters of interpersonal skills: listening, assertion, conflict-resolution, collaborative problem-solving, and skill selection (i.e., knowing which skill to apply). Each of these skills can be elicited and practiced in the interactive conversations that take place during classroom discussions. Classroom discussions can also provide an opportunity to teach about behaviors that are barriers to communication. Barriers include actions such as criticizing, name-calling, diagnosing, threatening, and others (Bolton, 1979).

Beyond supporting TLOs, ELOs, and leader development, discussion exercises during PME can provide Soldiers the benefits from direct practice at engaging in a larger discourse, something that is often used in operational settings in situations such as planning and coordinating within a unit or across units during multinational and multiservice missions. For example, Brookfield and Preskill (2005) identified 15 general benefits of using discussion exercises: Helps students explore a diversity of perspectives; Increases students' awareness of and tolerance for ambiguity or complexity; Helps students recognize and investigate their assumptions; Encourages attentive, respectful listening; Develops new appreciation for continuing differences; Increases intellectual agility; Helps students become connected to a topic; Shows respect for students' voices and experiences; Helps students learn the processes and habits of democratic discourse; Affirms students as co-creators of knowledge; Develops the capacity for the clear communication of ideas and meanings; Develops habits of collaborative learning; Increases breadth and makes students more empathetic; Helps students develop skills of synthesis and integration; Leads to transformation.

In order to most effectively apply discussion exercises during PME to develop a Soldier, it would be useful to identify and engage in discussion as a learning objective, and ensure that the discussion exercises conducted during PME are designed appropriately to support the development of discourse skills that need to be applied in the field, such as challenging ideas respectfully. Practice in a PME setting is critical because it will provide students the opportunities to engage with others who have varying levels of extroversion, confidence, listening ability, communication skills; the ability to reflect, integrate, and synthesize; as well as overall willingness to communicate which are known to be individual characteristics which can enhance or hinder discussion and ultimately the quality of discourse (Brookfield & Preskill, 2005).

There are three important conclusions that can be drawn with respect to discussion in the classroom and associated learning objectives. First, as with all course development, the selection of discussion as a learning tool should be founded in an active decision by the instructor regarding the appropriateness of the fit between discussion as a method and the course's TLOs and ELOs. It is important to identify how discussion meets the goals of the identified TLOs and ELOs, which can reflect differing classroom objectives. These objectives can range from training specific knowledge or skills in a technical or tactical area, to building broader Army leadership skills such as critical thinking, analysis, and communication. Second, given the robustness of discussion as a tool to advance identified Army educational objectives related to critical thinking, analysis, and communication, instructors should consider the extent to which TLOs and ELOs could or should be integrated into their course if they are not already included. Finally, given the importance of discussion itself in operational settings, and the broad application of discussion exercises within PME, it would be useful to proactively design discussion exercises in the classroom to develop discourse skills (e.g. humble inquiry, sense-making, etc.) that can be applied in operational settings.

In summary, the literature suggests that there are a variety of different objectives and skills that can be served by discussion exercises in the classroom. Determining strategies for stimulating an effective discussion requires identifying the objectives of a given situation or setting. In part this also involves identifying objectives that will improve Soldiers' application of discussion in operational settings. The next step is to ensure that the structure of the discussion exercise and skills practiced are appropriate for the objectives of the continuing discourse in the operational setting.

Structuring Discussion Appropriately

Once discussion is selected as a useful instructional tool to meet the identified TLOs and ELOs in the class, designing the structure of the discussion exercise requires careful attention to ensure that it supports rather than detracts from the objectives of the exercise. Some instructors may start class discussions by simply asking students to provide comments regarding a particular reading or topic. There are many approaches to engaging students in discussion, however, that are more planned and purposeful than simply asking for comments. Unfortunately, empirical research regarding the effectiveness of these discussion techniques is sparse and largely anecdotal. Typically the exercise concepts in the literature are presented as ideas that can be included in a toolkit and considered when designing a course or exercise, and prescriptive guidance is not available to suggest which exercise structures to select for different situations. This report endeavors to begin bridging this gap by identifying underlying characteristics of various discussion exercises and associating those with various discussion objectives.

Discussion Exercise Structures.

The review of the literature found 26 classroom discussion exercises that were applied in various educational settings. Two of these approaches reflected a standard monologic approach to the classroom (e.g., Reznitskaya et al., 2009); that is, a typical classroom question-answer session between the teacher and students in which the instructor is viewed as having the truth and is instructing others in order to impart his/her knowledge. The remaining 24 approaches were more dialogic in nature. The two monologic methods were, *Socratic questioning* and *Recitation*. Socratic questioning is a technique instructors use to guide students to a specific answer by

posing a series of questions (Brookfield, 2013). Instructors use recitation as a way to ask specific questions about assigned readings that have concrete known answers (Reznitskaya, 2012). Both methods are not considered to be discussion among students, but rather a conversation between instructor and student. They are included here to illustrate the distinction between this type of classroom interaction and the dialogic discussion approaches that stimulate interactive communication among students, however, both could provide conversational practice to varying degrees.

For the 24 dialogic exercises, a basic distinction emerged, identifying one group of exercises that were designed to include members of the entire class (11 exercises), and another group of exercises that split the class into smaller breakout groups for some or all of the discussion exercise (12 exercises). There was also one method that was described as a preparation exercise for discussion that would be appropriate for subsequent use with either the full group or breakout group approaches (1 exercise). Exercises that involve the entire class apply methods such as assigning students specific functional roles in the discussion, having them react to quotes or ideas, and incorporating writing and thinking time into discussions at various points (see descriptions in Table 1). Exercises that use breakout groups incorporate a variety of group sizes, from dyads to groups of 10, with some methods using an approach that combines smaller groups during the course of the exercise to form larger and larger subgroups (see descriptions in Table 2). Some breakout methods use rotation to switch groups during the exercise, and some include a final activity with the full class, while others do not.

As mentioned, one of the 24 approaches, *Quick writes*, was described as a precursor to discussion and appropriate before either full group or breakout group methods. To use *Quick writes* the instructor provides students with a prompt; students write down a response for 2-3 minutes then share their response with others using one of the other discussion techniques (full group or breakout groups). Student preparation techniques such as this one are helpful and can lead to higher levels of class participation (e.g., Weaver & Qi, 2005). In a similar technique, Madden (2010) suggested having students write out answers to question-clusters days in advance, in preparation for a discussion. The question clusters are developed using a class learning objective as the foundation and elaborating further using a series of related questions.

Table 1

Discussion Methods that Include the Full Class

Method	**Description**	**Reference**
Conversational roles	People are assigned a role to play in discussion – e.g.: Problem poser, Reflective analyst, Speculator, Questioner.	Brookfield (2013)
Conversational moves	People are assigned “conversational moves” on 3x5 cards and asked to practice their move at some point in the discussion.	Brookfield (2013)
Quotes to affirm and challenge	Each student brings two quotes to class from the assigned preparation reading: one quote the student wishes to affirm, one quote they wish to challenge.	Brookfield (2013)

Table 1 (continued)

Method	Description	Reference
Hatful of quotes	The leader puts five or six quotes from the readings onto slips of paper. These are placed in a hat and each student draws one. Students have a few minutes to think about the quote then take turns reading the quote out loud and commenting on it. Students decide when they want to contribute; they can build on previous comments they have already heard.	Brookfield (2013)
Chalk talk	The leader writes a question in the center of a board. Students silently write responses to the question, or to others' responses, on the board. Students can draw lines between responses that seem to connect or ones that are very different. People get up whenever they think of something. Long pauses may occur. After a long pause the instructor asks if they are done. They then begin to discuss the topic.	Brookfield (2013); Roberts (2013)
Appreciative pause	At least once in a discussion the instructor calls for a pause of around one minute. During the pause participants can only make comments to acknowledge how their learning was affected by something another person has said.	Brookfield (2013)
Lineup	A line is taped to the floor with anchors at either end. Students choose a place on the line according to their own views on an issue. Students actually stand on the line and discuss examples, rationale, etc. with students near them.	Huang (2005)

Table 2

Discussion Methods that Split the Class into Breakout Groups

Method	Description	Reference
Circle of voices	The instructor forms groups of five, provides a question for discussion, and gives three minutes of silence for people to organize their thoughts. Each person has one minute to say their thoughts. Then the discussion opens up and people are only allowed to talk about another person's ideas that were already shared, unless someone asks them to expand on their ideas.	Brookfield (2013)
Circular response technique	Use groups of about 10 people; each person responds to the person before them.	Brookfield (2013)
Snowballing	Students are given a discussion topic. Students jot down ideas for a few minutes; then form pairs to discuss. Each pair then joins another pair to form a group of four. The group of four then joins another group of four, etc. (Also called the Pyramid Challenge and Cocktail Party).	Brookfield (2013)

Table 2 (continued)

Method	Description	Reference
Relaxed buzz groups	Students are placed in small breakout groups to discuss the issues from reading/lecture. There are no prepared questions to answer – just free discussion.	Brookfield & Preskill (2005)
Structured buzz groups	Students are placed in breakout groups of five or less that convene to answer questions about the reading/lecture prepared by the teacher.	Brookfield & Preskill (2005)
Jigsaw	The class chooses four to five topics they want to know more about. Students in each group investigate one of the topics. Their group discusses what they found, then leads a discussion on it with the larger group.	Brookfield & Preskill (2005)
Mingling party	The instructor prepares a set of questions and shares them with students prior to arriving for class. During class, students circulate around the room and discuss the information they researched related to the questions.	Huang (2005)
Poster tour	The instructor identifies around five key issues to discuss then assigns an issue to each group of students. Each group assigns a facilitator and a record keeper. Students put their issue at the top of a flip-board and list out points underneath in bullet format. These posters are placed around the walls everyone tours the posters, while one group member stays with it.	Huang (2005)
Inside-outside circles	The class divides into inside and outside circles then discusses an identified topic with their paired member of the other circle. After a period of time one of the circles shifts and the new pairing has a discussion.	O'Connor (2013)
Think-pair shares	The teacher provides a prompt then students pair up to discuss the prompt. After a period of time each pair shares their thoughts with the class.	O'Connor (2013)
Fishbowl	Students are divided into groups of five or six. Each group selects topics to research and discuss. Students find materials for multiple viewpoints and come up with 8-10 key questions to address during the discussion. One group meets in center as active participants; the others sit around them to observe and evaluate their discussion behaviors.	Smart & Feathering-ham (2006)
Simultaneous reporting	Students are placed into groups and all groups are given a question or set of questions. Discussions are held regarding the question(s) within each group. The group then writes their answer(s) on a card and all groups report simultaneously. One option is to have each group turn in a paper with their decision and the single most compelling reason for their decision prior to reporting to the class.	Sweet, Michael-sen, & Wright (2012)

Although the classification of the exercise methods in Tables 1 and 2 is based on the stated use of the method in the original reference (full class vs breakout groups), a number of the exercises could be altered in some way to adapt them to use with the other type of approach. In addition to

differing with respect to full group or subgroup structure, the approaches in Tables 1 and 2 differ with respect to several other characteristics that would impact how they could be used in a class.

One characteristic is the extent to which they "force" participation through their inherent structure. In a full group method such as *Chalk talk*, the instructor writes a question on a board/screen and a period of time is allowed for students to come up and write responses to it as they think of something; with *Graffiti walls,* however, all students are expected to come up to write a response to the instructor's prompt, forcing all to participate. Similarly, in the breakout group method *Circle of voices,* each person takes one minute at the beginning of the session to say their thoughts before the discussion is opened up for interactive conversation. This ensures that everyone participates at least once in the exercise. In *Relaxed buzz groups,* on the other hand, students form breakout groups and discuss issues from the reading/lecture in an informal manner, enabling students to choose to contribute or not.

Methods also differ regarding the level of structure imposed on the discussion; while methods such as *Relaxed buzz groups* provide little structure regarding what is discussed, other methods such as *Simultaneous reporting* give groups a question or set of questions to which they need to respond. In other methods, rather than structuring the topic of the discussion, the method provides structure to the manner in which the discussion proceeds or the role a student plays in the discussion. For example, in the *Circular response technique* participants are placed in groups of about 10 each, and each person has to respond to the comment of the person before them; thus the manner in which the discussion proceeds is highly structured. In *Conversational roles*, participants are assigned a role to play in the discussion, such as "Questioner" or "Reflective analyst;" yet other aspects of the discussion are unstructured. Thus, both the level and type of structure provided by the method should be considered.

A third characteristic on which the exercises differ is whether they incorporate some type of written activity or thinking time into the discussion exercise or as part of the preparation for the exercise. As mentioned, *Quick writes* can be used as a precursor to any of the methods. In addition, for the Full Group Methods listed in Table 1, there are five of the eleven that provide time to think and/or write prior to the discussion (*Quotes to affirm/challenge, Hatful of quotes, Chalk talk, Appreciative pause,* and *Inquiry-based question cluster),* with 2 of the 6 having students prepare something prior to class (*Quotes to affirm/challenge,* and *Inquiry-based question cluster)*. For the 12 Breakout Group Methods in Table 2, 5 provide time to think and/or write prior to the discussion (*Circle of voices, Snowballing, Jigsaw, Mingling party,* and *Fishbowl),* with 3 of the 6 providing topics or questions that should be researched or reviewed prior to class, rather than at the start of the discussion (*Jigsaw, Mingling party,* and *Fishbowl)*.

These three characteristics therefore – forcing participation, providing structure, and incorporating written activities or thinking time – are factors to consider in selecting a structure for discussion. Each type of activity has advantages and disadvantages to not only TLOs and ELOs but also the types of communication skills which become practiced through the activity therefore a mix of approaches might be considered. As stated previously, prescriptive guidance was not available that describes a specific formula or method to use in selecting a discussion exercise structure for a given class situation. The structure can, however, be conceptually linked to the objective of the discussion exercise. These links are discussed next.

Linking Objectives with Structure

The TLOs and ELOs identified for a course are instrumental in determining whether discussion is a useful format for teaching in a given course. The objective or purpose that is identified for a discussion exercise within the course should also inform decisions that are made regarding the specific structure of the exercise that would be useful. Objectives discussed previously include building a deeper understanding of knowledge in a domain through deeper processing, synthesis; learning and practicing skills such as critical thinking, problem solving, communication, and interpersonal skills; and understanding diverse perspectives. It is also important to consider whether the discussion will be used to capture individual evaluations and/or group evaluations related to the TLOs and ELOs, as that can affect structural decisions.

With objectives that focus on providing students with an opportunity to practice cognitive or interpersonal skills, splitting the class into smaller groups provides an increased likelihood that the students will have opportunities to practice the skills. For practicing communication and interpersonal skills it may be useful to structure the discussion exercise such that members need to achieve a consensus regarding a topic or plan. This requires an added interpersonal challenge in that everyone cannot just "agree to disagree." With skill practice it may be important to impose some degree of structure as well as to force all to participate, to ensure that all students practice. This would also be beneficial as it is a more ecologically valid method for preparing Soldiers to engage in discourse in an operational setting.

In exercises striving to illuminate diverse perspectives and/or build a deeper understanding of concepts in a domain, using a full group discussion method may be appropriate to gain the widest diversity of opinions, and it may be less time consuming than forming breakout groups. It may also be helpful to use a method that forces participation, to ensure that all have a chance to participate and provide their perspective. If the discussion objective involves building a deeper understanding of knowledge in a particular area the full group method may be preferable to ensure that the instructor has an opportunity to monitor the accuracy of the knowledge being discussed.

Another important consideration is whether one of the objectives of the discussion exercise is to obtain evaluations in a given competency area. One breakout group method, *Fishbowl,* specifically incorporates robust peer assessment into the exercise. Although Smart and Featheringham (2006) use the *Fishbowl* method to capture assessments regarding interpersonal behaviors related to democratic discussion, using the technique to assess other competency areas could be explored as well.

Considering Personal and Interpersonal Characteristics

In addition to considering the objectives of the exercise it is important to consider the characteristics of the students and the interpersonal power dynamics within the class. Factors such as personality, experience, cultural background, gender, and race can potentially impact the dynamics of participation and discussion during class exercises (Brookfield & Preskill, 2005; Weaver & Qi, 2005). Students who are extroverted, talkative, or high in confidence will tend to dominate class discussions (Brookfield & Preskill, 2005). Research on the topic of student participation tended to address general participation in the classroom as opposed to participation specifically in discussion exercises. Chan and McCroskey (1987) measured a construct they

labeled ‘Willingness to Communicate,’ (WTC) and found that students high in WTC participated in class discussion more frequently. Student confidence is another characteristic that is strongly related to class participation, such that the more confident the student is the more likely they are to participate (Weaver & Qi, 2005).

Research on the effects of gender on class participation has been mixed. The communication styles of men and women differ (Tannen, 1990); yet the effect of this on participation in discussion is not clear (Brookfield & Preskill, 2005). Some research has found differences in the level of, or type of, participation in class based on gender or gender composition of the classroom (e.g., Hyde & Deal, 2003; Tatum, Schwartz, Schimmoeller, & Perry, 2013). Other research has reported little to no effect of gender on rates of class participation (Weaver & Qi, 2005). The impact of race on participation has been similarly unclear (e.g., Pitt & Packard, 2012). The lack of research that specifically examines the relationship between individual characteristics and participation in discussion or the learning effectiveness of discussion exercises suggests that more research in this area would be helpful to understand the discussion structures that would be best suited to students with particular characteristics, or to certain patterns of homogeneity or diversity within the group.

Brookfield (2013) suggests that the interpersonal characteristic that has the largest effect on the dynamics of the discussion are the power dynamics in the classroom, both among students and between students and the instructor. Power and influence are central to the dynamics of social groups (Forsyth, 2013), and English and Mayo (2012) note the importance of power dynamics in affecting discussion in adult learning. Power dynamics in the classroom can be affected by various participant characteristics such as personalities, experience, cultural background, gender, race, and socio-economic status (Brookfield, 2013). Students who are extroverted or highly confident will tend to dominate classroom discussions, and often once an initial “pecking order” of power is established based on participation in the first class, the same power dynamics are likely to continue throughout the entire term of the class (Brookfield, 2013). This leads to a situation in which participation in class discussion falls into a repeated pattern with a small number of students participating while the others listen, or perhaps tune the discussion out altogether. These power dynamics might be magnified in an operational setting. Discussion in the classroom might provide the opportunity to practice communication skills needed to tactfully navigate the discourse in an operational setting. Importantly, the design of the discussion exercise structure can either minimize or exacerbate negative effects of power dynamics within the classroom. In the next section of the report, exercise structures that encourage broad participation from the class will be discussed.

Preparing the Culture/Climate

A final factor to consider in designing the structure of the exercise is the importance of the class culture and climate. An inexperienced instructor may develop a detailed plan for the lecture portion of his or her class, yet simply identify a topic for class discussion without further planning or details. This presumes that the discussion will proceed easily once the instructor merely provides the topic. Clark (1998), however, describes meetings as having an ecology; that is, an interplay of the environment, personalities, and ideas of the participants involved. Planning must be used to ensure that the ecology of the group is productive in reaching the individual and group objectives. This includes preparing the overall class culture and daily climate, as well as being prepared to prompt or facilitate the discussion if needed.

As mentioned previously, Brookfield (2013) describes power as a preeminent element in the class, with the instructor holding the highest power of judgment over the discussion, but participants, who are most confident and have quick wit and intellectual capacity, wielding the highest power among the students. If the discussion objectives require capturing diverse opinions or ensuring wide participation, then the climate will likely need to be participative and democratic, and avoid this type of power classification. Similarly, if problem-solving and critical thinking are important, then a democratic climate is needed that will support critical discussion as would be similar to a planning meeting in the field. As the objectives of the exercise become increasingly complex – advancing analysis, synthesis, and evaluation – the importance of a democratic climate increases. Along these lines, Brookfield and Preskill (2005) suggest the importance of having class discussions be critical discussions, not just discussions; critical discussions are characterized by participants that question accepted ideas and beliefs, explore new ideas, rethink assumptions, engage in arguments and counterarguments, and probe contradictions. These characteristics are essential for engaging in a productive discourse and should be practiced.

In order to achieve learning through critical discussion, an open, democratic, and inclusive classroom climate is needed (Brookfield & Preskill, 2005; Madden, 2010). Balancing power to enable democratic discussion requires that the instructor actively develop the culture of the class in a manner that supports useful discussion; in particular, portraying discussion as a valued element of the curriculum and setting expectations and ground rules for how the discussion will proceed (Brookfield, 2013). Brookfield and Preskill (2005) describe nine conditions that are useful to creating a collaborative and respectful discussion climate: hospitality, participation, mindfulness, humility, mutuality, deliberation, appreciation, hope and autonomy. Descriptions of these characteristics can be seen in Table 3.

Table 3

Characteristics Important for Democratic Discussions (Brookfield & Preskill, 2005)

Characteristic	**Description**
Hospitality	Creating an atmosphere that invites people to participate.
Participation	Everyone finds ways to contribute to the group talk.
Mindfulness	Maintaining awareness of the group conversation and paying attention.
Humility	Accepting that one's knowledge and experience have limits and that the ideas of others provide value.
Mutuality	Maintaining an interest in the development of both self and others in the group.
Deliberation	Willingness to offer arguments and counterarguments with supporting data and evidence and holding strongly to opinions unless logic suggests otherwise.

Table 3 (continued)

Characteristic	Description
Appreciation	Finding opportunities to express appreciation to others in the group for specific contributions.
Hope	Maintaining hope that the group talk will result in reaching a new understanding, perspective, or clarification.
Autonomy	Understand and honor autonomous thought and the responsibility to take a stand.

Important elements in creating and sustaining the climate of a class are class "ground rules" and grading rubrics. Class ground rules established by the instructor and/or the class members set expectations for student behavior; in particular, ensuring that interactions are democratic and constructive (Brookfield, 2013; Brookfield & Preskill, 2005; Young, 2003). One way instructors can develop a useful climate for discussion is to enlist the help of class members at the beginning of a class to identify qualities of good and bad discussion and develop a shared class concept of what constitutes good and bad discussion (Hollander, 2002). The instructor and other students then monitor interactions and provide feedback when the ground rules are violated.

Instructors can also provide students with a grading rubric that specifically describes behaviors that constitute high quality discussion participation and encourages these desired behaviors. The rubric should reward quality of discussion as oppose to quantity of discussion, encouraging behaviors such as comments that build on or make connections with the comments of others or add a new perspective. This fosters discussions that analyze and synthesize information, building a deeper understanding of the topic, rather than encouraging participants to share many ideas or pieces of knowledge that in the end are repetitive or even irrelevant. Behaviors that specifically serve to keep the discussion moving, such as asking questions of others or building on their comments, or raising new questions to be considered should also be included. Even bringing in a new resource (e.g., book or article) to share that adds a unique perspective is useful for enabling a deeper discussion, and can be included in the discussion grading rubric (Brookfield, 2013).

In addition to preparing the culture prior to engaging in discussion, the instructor must also directly prepare for the discussion. This includes preparing predetermined questions that can move the discussion along if needed (Fanning, 2011). Lavitt (1992) describes the role of the facilitator as a traffic officer, ensuring that the flow of ideas moves toward the major points. In order to keep the discussion moving, and moving specifically toward the learning objectives, Huang (2005) suggests expanding the instructor's repertoire of ways to pose questions. One way to do this is to use Bloom's (1956, 1984) taxonomy as a tool to generate questions that are appropriate for the objectives of the discussion (Huang, 2005; Mainkar, 2008).

It is also important for instructors to model democratic talk for students. For example, during lecture portions of the class, they can begin and end with questions, introduce alternative perspectives, and insert periods of silence into the lecture (Brookfield & Preskill, 2005), and during discussions they can model prompting, clarifying, challenging, reminding, summarizing,

refocusing, etc. (Zhang & Stahl, 2011). Modeling the use of critical thinking vocabulary can build students' familiarization with and application of various tools, such as providing evidence, arguments, counterexamples, and hidden assumptions (Reznitskaya et al., 2009).

Listening skills are critical too, as well as allowing silence and time to think (e.g., Brookfield, 2013). This includes the instructor demonstrating effective listening skills (e.g., Huang, 2005), and encouraging effective listening in students (e.g., McGonigal, 2005). Bolton (1979) indicates that 75% of all oral communication is ignored. One way to emphasize the importance of listening is to have students repeat the last important point when they start talking (McGonigal, 2005). Guiding students to focus on listening and examining their own assumptions and evidence, rather than criticizing the thinking of others, promotes a positive climate and encourages thoughtful and purposeful discussion in which deeper analysis and synthesis is possible.

One final area on which some practitioners have focused is the importance of nonverbal cues/body language (e.g., Young, 2003). Young indicates that the first three minutes are critical for setting an appropriate climate and expectations; students notice what the instructor does when he/she enters, and the instructor's body language can have an important impact. Young suggests standing with and among the students at the beginning of class, and considering carefully the tone and substance of the first question that is posed to the students. As discussions can be difficult to get started, Young recommends always writing something on the board from the first response, while nodding, smiling, or saying something encouraging, which can set a positive tone for others to follow. There are a number of detailed sources of information that can be examined for a more in depth consideration of general principles of facilitation during discussion (e.g., Bens, 2012; Kelsey & Plumb, 2004; Wilkinson, 2012).

It is clear that the facilitation actions and style of the instructor affects the discussion process and outcome, and students report that it is important to have a facilitator (Askell-Williams & Lawson, 2005). Although the instructor has an important role, his/her responsiblity is to facilitate student-centered discussion and not to simply share personal insights (Madden, 2010). This means instructors should intervene and provide scaffolding only when discussion slows down, or is not moving toward achieving the learning objective (Mainkar, 2008; Zhang & Stahl, 2011).

One final practical factor that can affect both the climate and effectiveness of discussion in the classroom is the amount of time available. All courses have limited time and typically have more to accomplish than they have time to sufficiently cover. Developing ideas in a discussion can take more time than lecture or question-and-answer sessions, though good facilitation can help make discussion more efficient. Some instructors will maintain that they do not have time to have the class engage in discussion; while others suggest that discussion can build personal and intellectual connections with the materials that cannot be built using monologic methods (e.g., Brookfield & Preskill, 2005). Having tools for instructors that better enable them to balance course design decisions between the importance of discussion and class time available would be helpful.

While the research cited here was primarily from non-military sources, research and doctrine in the military suggests that a democratic climate is also optimal for discussions during operational activities such as after action reviews (AARs), and planning processes such as

mission planning meetings (e.g., Karrasch & Gunther, 2014) and the Army Design Methodology (ATP 5.0-1). Mastaglio et al., (2011) indicated that facilitators in AARs worked to create a positive and comfortable learning atmosphere which fostered participation, discussion, openness, self-discovery, and ownership of the AAR and its results. A democratic and respectful environment is also required for successful discussion during Army Design Methodology (School of Advanced Military Studies, nd). The Art of Design guide describes the rules of discourse as including listening carefully and with humility, treating every person with respect, not making personal attacks or comments, and not interrupting others (p. 164). Similarly, Karrasch and Gunther (2014) describe a meeting of a combined joint planning team in Afghanistan in which the autocratic climate that unintentionally developed was completely counterproductive to the objective that needed to be achieved by the meeting.

As described in this section, the culture and climate of a class can impact the effectiveness of discussion in the classroom. An open, democratic climate has been identified as important to holding discussions in which participants question accepted ideas and beliefs, explore new ideas, rethink assumptions and participate in arguments. As the objectives of discussion become increasingly complex, the importance of a democratic climate increases. This becomes exceedingly true in an operational setting where discourse is needed (e.g. planning). Instructors can model effective democratic speaking and listening skills, and establish ground rules and grading rubrics that encourage appropriate discussion behaviors and build a democratic climate.

Assessment and Evaluation

There are two aspects to consider with respect to assessment and evaluation: how to evaluate students in discussion exercises and the broader question of how to evaluate the effectiveness of the discussion exercise itself.

Student Evaluation

Discussion exercises could be used to evaluate students with respect to any number of identified knowledge and skill areas that were defined as objectives of the exercise; however, literature was not identified that described best practices or discussed how this should be approached. The assessment topic that did receive considerable attention in the literature was the question of whether participation in discussion should be part of student evaluation. Although some oppose grading participation during discussion, stating that it forces the instructor to have two incompatible roles at the same time - supporting student learning and evaluating (e.g., Gilson, 1994), most of the literature indicated it was useful to reflect discussion participation in the grading criteria in order to ensure that students are motivated to participate in discussion exercises (e.g., Brookfield, 2013; O'Connor, 2013). If participation is evaluated, simply stating that participation is a portion of the student's grade, however, can motivate participants to engage in a large quantity of participation that provides little value toward achieving the objective of the exercise. To prevent this type of participation, instructors can provide and discuss with students a grading rubric that specifically describes behaviors that constitute high quality discussion participation and encourage desired behaviors such as exuding democratic qualities during discussion exercises. Participation behaviors that should be considered high quality will depend in part on the objective of the discussion. A few examples include comments

that build on or make connections to others or add a new perspective; making a link between the comments of others, or raising new questions to be considered (Brookfield, 2013). Bloom's taxonomy can be used as a good resource for developing questions that target a specific level of learning (e.g., synthesis).

While the instructor is most typically the individual to capture assessment information, some have suggested ways to use self or peer evaluations during discussion (e.g., Foster et al., 2009; Mainkar, 2008; Smart & Featheringham, 2006). Foster et al., (2009) found that having students record their own in-class comments on notecards increased the participation of low-responding students if they received points for participation; however, a substantial percentage of students (38-39%) did not participate at all regardless of the points.

Some practitioners have used peers for assessment. Smart and Featheringham (2006), for example, describe a technique they label the "fishbowl." In this technique, the instructor creates an evaluation form based on identified list of positive and negative discussion behaviors. Example positive behaviors might be providing a relevant comment, supporting a position with evidence, asking a clarifying question, etc. Example negative behaviors might include distracting others, not paying attention, interrupting others, etc. Students are divided into groups of 5-6 and each group selects topics to research and discuss, then finds materials for multiple viewpoints and develops 8-10 key questions to address during the discussion. Each group takes a turn meeting in the center as active participants, while people in the other groups sit around them to observe and evaluate discussion behaviors using the evaluation form. The other students therefore serve as evaluators, and can ask questions and provide brief feedback.

In another peer rating system, the Attendance and Discussion Participation System (ADPS), two student evaluators judge the discussion participation of each class member on a given day, and all students have an opportunity to serve as an evaluator at some point. Students earn 0-3 points each class session, and points are totaled and included as part of the individual's grade (Mainkar, 2008). The students record their assessments using a structured evaluation sheet with three rating levels (see Figure 1).

Evaluation	**No Comments:** Present but engages in unprofessional conduct such as using their phone or talking out of turn.	**No Substance Comments:** Does not add to the understanding of the topic; repeats what other students have already said.	**Straight-Forward Comments:** Provides good content to answer the question, but not creative/ unique.	**Insightful Comments:** Significantly improves the class learning; makes a creative connections and takes discussion in a new direction.
Class 1	0	1	2	3
Class 2	0	1	2	3

Figure 1. Sample Attendance and Discussion Participation System (ADPS) rating form used for peer assessments.

Exercise and Discussion Evaluation

In addition to considering how students will be evaluated with respect to the discussion, it is important to evaluate the discussion exercise and resulting discussion itself. There are two key dimensions to consider in evaluating discussion: first, evaluating the effectiveness of the chosen discussion exercise in meeting the identified learning objectives, and second, evaluating the quality of the discussion produced within the exercise.

One way to evaluate the effectiveness of the discussion in meeting a learning objective is to adapt Kirkpatrick's training evaluation method to discussion. Kirkpatrick's four levels of training evaluation consist of: (1) Level 1: Reaction to training (discussion), (2) Level 2: Learning acquired, including knowledge, skills, attitudes, confidence, (3) Level 3: Behavior applied back on the job, and (4) Level 4: Results – targeted outcomes as a consequence of training (Kirkpatrick & Kirkpatrick, 2006). While evaluating at all four levels is important, learning evaluations typically focus only on the first two levels due to practical limitations. Level 1 evaluations can be collected using anonymous student surveys that target opinions regarding the extent to which the discussion exercises were effective in meeting specific identified objectives. In developing the Level 2 evaluation tools, it is critical that the assessment is an appropriate match for the type of learning expected from the discussion exercises.

For example, in a field experiment that compared lecture and discussion teaching formats for a basic management course at a university, Elfner (1980) found that students in the lecture-format course received higher scores on their final essay exam than students in either of two discussion-method approaches. This result may be due to the effectiveness of the methods used (i.e. lecture vs. discussion), or may be due to the appropriateness of each teaching method for that specific learning outcome (the essay exam). If the essay exam asked students to provide a specific set of facts or opinions, and these were specifically highlighted in the lecture, the lecture method and learning criteria are well-matched. If the discussion sessions were unstructured and/or unmonitored, and did not necessarily address the information requested on the essay exam, the discussion method and learning criteria were not well-matched. The resulting outcome is predictable and expected: a poor relationship, and thus, poor performance.

One way to evaluate the quality of the discussion is to adapt the 15 general benefits of using discussion exercises identified by Brookfield and Preskill (2005) as the basis for items in an evaluation tool:

- Helps students explore diverse perspectives.
- Increases students' awareness of and tolerance for ambiguity or complexity.
- Helps students recognize and investigate their assumptions.
- Encourages attentive, respectful listening.
- Develops new appreciation for continuing differences.
- Increases intellectual agility.
- Helps students become connected to a topic.
- Shows respect for students' voices and experiences.
- Helps students learn the processes and habits of democratic discourse.
- Affirms students as co-creators of knowledge.
- Develops the capacity for the clear communication of ideas and meanings.

- Develops habits of collaborative learning, while remaining topical and relevant.
- Increases breadth and makes students more empathetic.
- Helps students develop skills of synthesis and integration.
- Leads to transformation.

Some of these may be identified specifically as learning objectives of the discussion exercise and evaluated with respect to the learning objectives; for example, *Understand diverse perspectives* could be used with reference to a diversity of perspectives about a specific knowledge domain or topic. An important overarching aspect of quality discussion is that the learning outcomes were achieved.

In addition to the question of what should be measured to capture information about the quality of discussion, the other important question is who will be completing the assessment. Students, the instructor, or an outside observer could all be used to gather evaluations. If an outside observer is available to conduct an evaluation, the items suggested above could be modified to reflect a more detailed behaviorally-anchored rating approach. For example, to capture participation the item, "In this class everyone can find ways to contribute to the group discussion" can be modified to form an anchored rating scale based on hospitality of the climate (see Figure 2).

Hospitality Climate

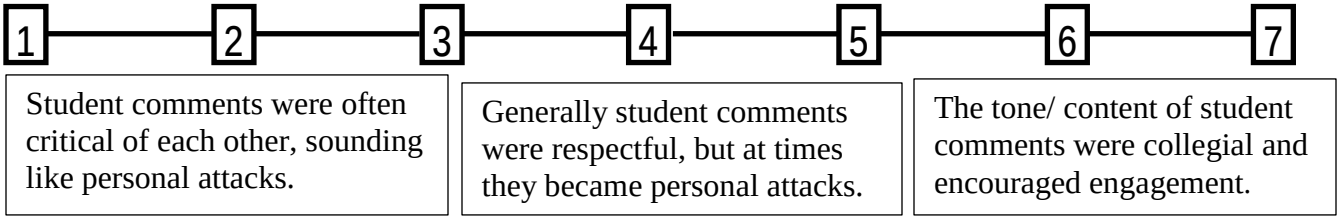

Figure 2. Example anchored behavioral scale of hospitality of the class climate.

In order to develop reliable and valid rating scales, the following approach could be taken. A final list of rating dimensions should be selected based on the dimensions suggested by Brookfield and Preskill (2005), ground rules identified for the specific class, and consideration of the class discussion objectives. Definitions should be provided for each identified dimension, and specific behavioral examples of low, moderate, and high performance should be identified. If possible, a retranslation exercise should be conducted in which multiple raters identify the dimension and rating level of each behavioral example. Examples with low agreement should be dropped or revised, and the dimensions and anchors finalized based on the results of the psychometric analysis.

Identifying Best Practices

Taken together, the information extracted from the literature can be summarized into 13 best practices for conducting discussion, organized into these four topic areas:

- Identifying the goals of discussion

- Creating a democratic climate
- Encouraging broad participation
- Facilitating communication

Best practices within each of these four topic areas will be described.

Identifying the Goals of Discussion

It is important to clearly and specifically identify the goals of discussion in a setting, just as it is important to specify the goals for any class exercise or for any meeting in an operational setting. The goals define the requirements for discussion and set the foundation for determining whether or not the discussion was effective. While there are a limitless number of potential goals for discussion, the review of the literature identified some recurring themes regarding general discussion goals. These were used to identify three best practices to consider with respect to discussion goals.

Determine the relative importance of understanding content, understanding perspectives, and communicating information.

Three common goals for discussion are sharing factual information, sharing/eliciting multiple opinions or perspectives, and communicating to others a particular point of view or decision. As discussed previously, the structure and approach used for discussion can impact the discussion itself and who and how many people have a chance to participate. Different types of structures facilitate different objectives; therefore, it is critical to weigh the relative importance of these and determine which is the most and least important for the discussion.

Consider whether the discussion needs to illuminate differences, achieve consensus, or both.

Related to the first best practice, another common subtheme in discussion is whether the discussion serves to uncover and enlighten participants regarding diversity and differences, or if the participants need to achieve consensus regarding a particular decision, plan, or approach. Achieving consensus suggests that persuasion is important and some type of concession and negotiation will be required. If the goal of discussion is to achieve consensus, broad participation is not necessarily needed; however, if the goal of discussion is to illuminate diversity, broad participation is critical. At times both goals are important – in an operational setting in which joint and combined forces are coordinating regarding a plan, it is likely that discussion must first serve to illustrate differences among the participants, then the differences are used to form the foundation for a mutually agreed upon plan. If both goals are critical to the success of the discussion, this is important to recognize in planning the structure and approach to discussion. It may be useful if feasible to conduct two discussion sessions that have different structures and approaches in order to achieve the two different goals.

Identify the cognitive processes participants should be using during the discussion (remember, understand, apply, analyze, evaluate, create).

The objective affects the nature of the discussion that is required; if the objective is simply to share information, this requires only a low level of cognitive processing. On the other hand, if the discussion is being used to engage in the Army Design Methodology, high level cognitive processes such as analyzing, evaluating, and creating will be required. For educational

discussion, Krathwohl (2002) describes a two-dimensional revision of Bloom's (1956, 1984) taxonomy that describes both the type of knowledge being taught (factual, conceptual, procedural, or metacognitive knowledge), as well as the cognitive processes required (remember, understand, apply, analyze, evaluate, and create). Recognizing the nature of the cognitive requirements of the discussion is helpful in at least two ways: (1) ensuring participants understand what is required and how to prepare for the discussion, and (2) ensuring the climate is appropriate for the discussion, with a democratic climate particularly important as higher levels of cognitive processing are required.

Creating a Democratic Climate

While different climates may facilitate different discussion objectives, the literature indicated that creating a democratic climate for discussion was typically desirable. There were a number of suggestions related to how to develop an appropriate climate, both in the educational literature, and from an operational perspective from Karrasch & Gunther (2014). These are provided in four best practices.

Practice respectful communication.

General communication skills and respect for others are important for effective communication across a variety of social settings, including discussion. Bolton (1979) suggests that despite the importance of interpersonal communication, the average person does not communicate well, and has a tendency toward defensiveness, poor listening skills, and allowing communication barriers to impact communication. In order to practice respectful and effective communication, it is important to avoid these barriers; for example, avoiding actions such as criticizing, name-calling, ordering, threatening, or moralizing. These communication approaches judge others and preclude understanding their opinions and concerns, which leads to breakdowns in communication.

Remain open, do not pre-judge ideas (Humble Inquiry).

Along these lines, remaining open to the ideas and thoughts of others, rather than criticizing or immediately dismissing them is important to creating a democratic climate. Brookfield and Preskill (2005) emphasize the importance of humility; that is, accepting that one's knowledge and experience have limits and that the ideas of others provide value. Guiding students to focus on examining their own assumptions and evidence, rather than criticizing the thinking of others (McGonigal, 2005), can promote a positive climate.

Listen and respect all points of view.

Exercising effective listening skills is important, such as showing attentiveness through body posture and eye contact, and showing reflectiveness through paraphrasing and summative statements (Bolton, 1979). One way to emphasize the importance of listening is to have participants, using their own words, paraphrase back to the previous speaker their main points and ideas.

Avoid using cross-examination tones.

Karrasch and Gunther (2014) emphasize the importance of not making participants in discussion feel that they are on trial; that is, in discussion questions should be presented as an invitation to think more deeply about a topic, not as a demand to defend a position. In order to

create a democratic climate, participants need to feel comfortable choosing to respond or not respond to further questions about their position.

Encouraging Broad Participation

The literature on discussion suggests that, regardless of the objectives of discussion, it is generally beneficial to have a broad level of participation in discussion, rather than having only a portion of the members involved in the discussion. Three best practices were identified that relate to encouraging broad participation: 1) Temper dominant voice; 2) Provide time to think; and 3) When talking, provide depth without dominating the discussion.

Temper dominant voices.

There are a number of methods that can be used to temper dominant voices, including a variety of discussion structures that keep participation more evenly distributed by design. In classroom settings, grading criteria and class ground rules can also be established to encourage broad participation and ensure that individuals who over-participate are not rewarded and are possibly penalized. Tempering dominant voices makes it more likely the group will have a chance to listen to those closest to the problem even if they are not talkative or dominating. Listening to those closest to the problem is important for discussion that is working to solve a problem (Karrasch & Gunther, 2014).

Provide time to think - use minutes of silent reflection.

Because people differ on their willingness or restraint to participate in discussion, providing participants with time to think at various points during discussion that allow people the time they need to collect and organize their thoughts prior to having to speak them aloud. This prevents people from having to respond to a question or prompt immediately, and can improve the breadth of participation in the group by enabling participants with time to think. Providing time to think also can encourage discussion that is more thoughtful and targeted to the identified goals and objectives. In addition to simply providing time to think, participants can also be asked to write down responses to a prompt or question prior to engaging in verbal discussion.

When talking, provide depth without dominating the discussion

In order to facilitate breadth in participation, it is also important that each speaker be willing to offer their honest opinions and supporting arguments, yet not dominate too much of the available time (Karrasch & Gunther, 2014). Brookfield and Preskill (2005) describe the importance of deliberation (the willingness to offer arguments and counterarguments and hold strongly to opinions unless logic suggests otherwise), and autonomy (honoring the responsibility to take a stand) in developing a democratic culture. Being respectful of others' opinions and participation should encourage participants to ensure that they do not dominate the discussion.

Facilitating Communication

Typically discussion is most effective when there is a facilitator who can serve to monitor the discussion process, ensuring that a democratic climate is developed, that broad participation is encouraged, and the identified goals of discussion are achieved. The instructor or facilitator, as well as participants, can also take steps to effectively engage in and facilitate communication during discussion. While the instructor will have the primary facilitation role in learning settings, in operational settings leaders may need to serve as facilitators during meetings, and all

participants can facilitate communication during discussion. The final three best practices describe ways to facilitate communication during discussion.

Use constructive questioning strategies.

Facilitators serve to ensure the flow of ideas keeps moving toward the learning objectives (Lavitt, 1992). In order to do this, they need to prepare questions in advance that can move the discussion toward the objectives (Fanning, 2011). There are several questioning strategies that can facilitate productive discussion. One useful strategy is to initiate discussion by asking open ended questions and then ask for more concrete information. Mastaglio et al., (2011) identified this as a challenge for AAR facilitators – crafting and asking open-ended questions that can generate group discussion. In their investigation of effective AARs they found that both junior and senior leaders needed to focus on fostering participation in the session and learning how to facilitate such as asking open-ended questions, listening, and allowing the unit to talk, rather than instruct using actions.

It is also important to ensure that questions are truly questions and not assertions phrased as questions – as Karrasch and Gunther (2014) state, "Never dress up an assertion as a question (e.g., Are you going to stand there and do nothing? – When you really mean "help me analyze this situation," p.3). Finally, in order to facilitate and encourage discussion that involves complex cognitive tasks, facilitators can use Bloom's (1956, 1984) taxonomy as a tool to generate questions that are appropriate for the objectives of the discussion. This ensures that discussion intended to analyze, evaluate, and create complex ideas moves in that direction.

Model democratic discussion.

It is also important for facilitators or experienced participants to model democratic talk for other participants; for example, introducing alternative perspectives (Brookfield & Preskill, 2005) and modeling actions such as prompting, clarifying, summarizing, and refocusing (Zhang & Stahl, 2011). Participants can also model the strategy of questioning their own assumptions, and using that to look for new insights regarding the situation or problem.

Approach discussion with motivation and candor.

Finally, in addition to modeling democratic discussion and using appropriate questioning techniques, it is important to approach discussion with interest, motivation, and candor and model this approach for other participants. Rather than having assumptions guide the discussion, engage in curiosity and question existing assumptions (Karrasch & Gunther, 2014). Approaching discussion with candor, speaking from the heart and personal experience, as well as with courage and wisdom, maintains a positive tone in the discussion and models sincerity.

Discussion

This report identified different types of verbal interaction, provided an initial review of the existing literature on discussion in learning settings, and focused on discussion as an important tool in both learning and on-the-job settings.

The U.S. Army Learning Concept (U.S Department of the Army, 2017) emphasizes the importance of incorporating input from learners and building collaborative experiences in the classroom that are led by facilitators (as opposed to being taught by instructors). Improving student discussion in the classroom supports this objective and sets the stage for developing

discourse skills in an operational environment. A framework of 13 best practices defines components for conducting productive discussion. These best practices span four key topic areas: identifying the goals of discussion, creating a democratic climate, encouraging broad participation, and facilitating communication.

Identifying the goals of discussion is an essential first step in creating productive discussion. Discussion can serve many purposes in learning settings and the objective or purpose of the discussion informs the decisions that are made regarding the structure and characteristics that would be useful. Discussion that strives to illuminate group differences may be structured differently from discussion that needs to achieve consensus. The same concepts can be applied to meetings on the job such as key leader engagements, multinational planning sessions, or other unit meetings. Thus, close attention must be paid to the goal of a meeting, which could be building rapport, sharing knowledge, gaining another's perspective, or a variety of social, political or military goals. The challenge is to identify ways the meeting can be structured that will make discussion more productive in achieving the objective.

Creating a democratic climate is generally desirable for conducting discussion. A democratic climate is characterized by respectful communication and an atmosphere that invites people to participate, appreciates a variety of contributions, and honors autonomous thought. There are a number of steps instructors can take to build a democratic class climate, such as modeling democratic talking and listening skills and creating grading rubrics and evaluation procedures that track and encourage appropriate behaviors. Some of these concepts would easily translate to meetings on the job, but others, such as the grading rubric, would need significant modification. The challenge is to create a tool that can achieve a similar effect in meetings as the grading rubric does in a class: rewarding appropriate discussion behaviors and dissuading counterproductive ones. It might be possible to have the participants of the meeting identify and adopt a set of ground rules for the meeting, though there would not be a corresponding grading rubric. Tools to help leaders translate the concepts from this report into actions that can be taken in a unit setting would be highly useful.

Encouraging broad participation is also beneficial to most discussion. There are specific actions that can be taken to encourage more timid participants and to temper more dominant voices. A number of the discussion approaches described in Tables 2 and 3 contain elements that structure participation in discussion. Typically this involves methods that force participation to some extent – such as the *Circle of voices* method, in which each person takes one minute at the beginning to say their thoughts before the discussion is opened up for a more interactive conversation. Some of these methods could be used in part or in whole in settings on the job to encourage participation in discussion during meetings or other engagements. A better understanding still needs to be developed, however, regarding when and how these methods can and should be applied in job settings.

Importantly, while practitioners have contributed greatly to literature in this area, very little empirical research has been conducted. This presents fertile ground for conducting future research.

Future Research

There are numerous avenues of research that can be conducted to better understand methods for establishing productive discussion, from examining individual characteristics related to participation in discussion and preferences for discussion structures, to determining the most effective method(s) for creating a democratic climate. Research in five areas is highlighted here: 1) developing prescriptive approaches for selecting and designing discussion methods, 2) examining discussion methods as applied to cross-cultural and other on-the-job settings as opposed to in the classroom, 3) determining factors that apply to productive discussion in remote or e-learning settings, 4) establishing best practices and ground rules for providing feedback with respect to the (in)accuracy of comments during discussion, and 5) identify qualities that comprise a larger discourse.

While this review of the literature identified a number of factors that should be considered when integrating discussion into a learning setting, there was not sufficient research to develop a prescriptive approach for taking these factors into consideration or determining how to weight each factor within a decision making process. Empirical research is needed to examine the effectiveness of different discussion structures and methods within different settings. Settings could vary based on factors such as the nature of the objective, characteristics of the participants, knowledge level of the leader, time available, and the operational climate. Analyses would need to determine the interaction of the methods with these various contextual factors. The goal would not necessarily be to identify a single best approach for each context; but rather to create a decision matrix that would assist in identifying a set of best structures or features to incorporate based on a given context.

The literature identified in this report primarily examined discussion in learning settings, yet as described in the report, discussion is highly applicable to field training and job settings in the Army, in areas such as conducting planning and problem solving meetings, key leader engagements, and AARs. The Army Leader's Guide to After-Action Reviews (U.S Department of the Army, 1993) describes AARs as a professional participative discussion that incorporates the opinions of participants. Some aspects of the literature reviewed in this report apply to these on-the-job settings in a conceptual sense; however, contextual differences between classrooms and job settings require consideration of additional literatures to inform the development of relevant theory and recommendations.

As an example, conducting AARs involves a more complicated set of power relationships than classroom discussions. In a classroom discussion, the instructor holds the primary power in the room. In AARs, however, there may be multiple levels of unit leaders, as well as observer/controllers, and senior mentors involved in the discussion each holding a certain type and level of power. Even more complex, meetings and key leader engagements on deployments can involve combined forces, host nation personnel, and potentially numerous other types of participants. This adds power complexity as well as other contextual challenges such as cross-cultural complexity into discussion. Understanding discussion in cross-cultural settings will require considering the impact of cultural dimensions such as views of social inequality, concepts of individualism, gender roles, and uncertainty avoidance on preferences for discussion methods, approaches, and climates (see Hofstede & Hofstede, 2005, for a discussion of cultural dimensions). In some cultures, for example, a democratic climate for discussion in which all opinions are valued may be awkward or even offensive.

In order to improve our understanding of discussions in field settings, research should also further examine literature regarding communication, teaming, and collaboration, which are each essential elements for positive inclusive climates and effective functioning of the Army. Understanding the role of discussion in critical thinking and reasoning in group or team settings can provide important insight into methods to gain cognitive dominance against future threats. Better understanding of team discussion may have implications for the development of team identity and achieving higher levels of problem solving at different stages of communication.

Another avenue for further research on discussion is to build an understanding of how the literature on productive discussion in learning applies to remote or e-learning, examining existing literature on using digital methods to conduct productive discussion. Some research regarding online discussions exists (e.g., Wise, Saghafian, & Padmanabhan, 2012), and requires a thorough review and consideration. Kimball & Byerly (2013) recommended applying interactive discussions and exercises to Army distributed learning, indicating that digital learning needs to incorporate social learning to make it more effective. Online discussion forums can provide a solution for this, such as the milSuite platform (Kimball & Byerly, 2013). Some of the same principles for in-person discussion may apply to digital discussion; however this is a rich area for further research.

As Army training approaches reflect more synchronized actions between Soldiers, Civilians, and teams (U.S Department of the Army, 2017), it becomes very important to understand techniques such as discussion, and how to approach discussion to achieve maximal benefit for educational and operational settings. For example, understanding the best practices to providing meaningful feedback on discussion both in classroom, as well as operational environments is a much needed avenue for future research. While new technologies and tailored training can bring revolutionary changes to future Army education, more effectively applying existing tools such as discussion exercises and feedback tools can improve learning and training transfer and can do so quickly and at a low cost.

Finally, there is a need to move beyond discussion and expand the Army's understanding of discourse. Specifically, the Army can benefit from understanding how multiple forms of communication (conversation, discussion, dialogue, etc.) form a larger discourse. Unlike these discrete communication components, discourse can be leveraged as a tool for coming to a mutual understanding, for solving complex/wicked problems resulting in better operational planning and strategic outcomes. Knowing how to stimulate a discussion is only the first step. Understanding the qualities needed to develop and sustain a larger discourse would be a worthwhile second step to take.

References

Askell-Williams, H., & Lawson, M. J. (2005). Students' knowledge about the value of discussions for teaching and learning. *Social Psychology of Education, 8,* 83-115.

Bens, I. (2012). *Facilitating with ease!* (3rd Edition). San Francisco, CA: Jossey-Bass.

Bloom, B. S. (Ed.). (1956). *Taxonomy of educational objectives: The classification of educational goals (Handbook 1: Cognitive Domain).* New York, NY: McKay.

Bloom, B. S. (1984). *Bloom taxonomy of education objectives.* Boston, MA: Allyn & Bacon.

Blumenfeld, P. C., Marx, R. W., Patrick, H., Krajcik, J. & Soloway, E. (1997). Teaching for understanding. In B.J. Biddle, T.L. Good, & I. Goodson (Eds.), *International handbook of teachers and teaching* (Vol. 2). Norwell, MA: Kluwer Academic Publishers, pp. 819-878.

Bolton, R. (1979). *People skills.* New York, NY: Simon & Schuster, Inc.

Bowman, S. (2002). *Preventing death by lecture.* Glenbrook, NV: Bowperson Publishing Company.

Bransford, J. D. (1979). *Human cognition: Learning, understanding and remembering.* Belmont, CA: Wadsworth.

Bridges, D. (1988). *Education, democracy, and discussion.* Lanham, MD: University Press of America.

Brookfield, S. D. (2013). *Powerful techniques for teaching adults.* San Francisco, CA: Jossey-Bass.

Brookfield, S. D., & Preskill, S. (2005). *Discussion as a way of teaching* (2nd Ed.). San Francisco, CA: Jossey-Bass.

Bruer, J. T. (1996). Classroom problems, school culture and cognitive research. In K. McGilly (Ed.), *Classroom lessons: Integrating cognitive theory and classroom practice.* Cambridge, MA: MIT Press, pp. 273-290.

Chan, B., & McCroskey, J. C. (1987). The WTC scale as a predictor of classroom participation. *Communication Research Reports, 4,* 47-50.

Clark, T. (1998). Teaching students to enhance the ecology of small group meetings. *Business Communication Quarterly, 61,* 40-52.

Craik, F. I .M., & Lockhart, R. S. (1972). Levels of processing: A framework for memory research. *Journal of Verbal Learning and Verbal Behaviour, 11,* 671-684.

Dallimore, E. J., Hertenstein, J. H., & Platt, M. B. (2006). Nonvoluntary class participation in graduate discussion courses: Effects of grading and cold calling. *Journal of Management Education, 30,* 354-377.

Delaney, E. (1991). Applying geography in the classroom through structured discussion. *Journal of Geography, 90,* 129-133.

Dillon, J. (1994). *Using discussion in classrooms.* Buckingham, England: Open University Press.

Elfner, E. S. (1980). Lecture versus discussion formats in teaching a basic management course. *Academy of Management Proceedings, 1,* 104-107.

English, L. M., & Mayo, P. (2012). *Learning with adults: A critical pedagogical introduction.* Boston, MA: Sense Publishers.

Ewens, W. (2000). Teaching using discussion. In R. Neff & M. Weimer (Eds.), *Classroom communication: Collected readings for effective discussion and questioning (*pp. 21-26). Madison, WI: Atwood.

Fanning, F. E. (2011). Engaging learners: Techniques to make training stick. *Professional Safety, August 2011,* 42-48.

Forsyth, D. R. (2013). *Group dynamics* (6th ed.). Belmont, CA: Cengage Learning.

Foster, L., Krohn, K., McCleary, D., Aspiranti, K., Nalls, M., Quillivan, C., Taylor, C. & Williams, R. (2009). Increasing low-responding students' participation in class discussion. *Journal of Behavioral Education, 18,* 173-188.

Garside, C. (1996). Look who's talking: A comparison of lecture and group discussion teaching strategies in developing critical thinking skills. *Communication Education, 45,* 212-227.

Gilmore, T. N., & Schall, E. (1996). Staying alive to learning: Integrating enactments with case teaching to develop leaders. *Journal of Policy Analysis & Management, 15,* 444-457.

Gilson, C. (1994). Of dinosaurs and sacred cows: The grading of classroom participation. *Journal of Management Education, 18,* 227-236.

Gokhale, A. A. (1995). Collaborative learning enhances critical thinking. *Journal of Technology Education, 7*(1), 1. Retrieved from http://scholar.lib.vt.edu/ejournals/JTE/v7n1/gokhale.jte-v7n1.html?ref=Sawos.Org

Goldsmith, J. J. (2014). Revisiting the lecture. *Training and Development,* 68(6), 30-32.

Griffin, C. C., League, M. B., Griffin, V. L., & Bae, J. (2013). Discussion practices in inclusive elementary mathematics classrooms. *Learning Disability Quarterly, 36,* 9-20.

Hofstede, G., & Hofstede, G. J. (2005). *Cultures and organizations: Software of the mind.* New York, NY: McGraw-Hill.

Hollander, J. A. (2002). Learning to discuss: Strategies for improving the quality of class discussion. *Teaching Sociology, 30,* 317-327.

Huang, L. (2005, December). Fine-tuning the craft of teaching by discussion. *Business Communication Quarterly*, *68*(4), 492-500.

Hyde, C. A. & Deal, K. H. (2003). Does gender matter? Male and female participation in social work classrooms. *Journal of Women & Social Work, 18,* 192-209.

Joint Chiefs of Staff (2015). *Officer professional military education policy (OPMEP).* (CJCSI 1800.01E). Washington, D.C.: Author. Retrieved from http://www.dtic.mil/doctrine/education/officer_JPME/cjcsi1800_01e.pdf

Karp, D. A., & Yoels, W. C. (1976). The college classroom: Some observations on the meaning of student participation. *Sociology and Social Research, 60,* 421-439.

Karrasch, A., & Gunther, H. (May 2, 2014). The power of discussion. *Small Wars Journal,* Retrieved from http://smallwarsjournal.com/jrnl/art/the-power-of-discussion

Kelsey, D., & Plumb, P. (2004). *Great meetings! Great results: A practical guide for facilitating successful, productive meetings.* Portland, ME: Great Meetings! Inc.

Kem, J. D. (2015). *The use of case studies as an integrating approach in professional military education: A pilot study.* (unpublished faculty paper).

Kidd, J. R. (1973). *How adults learn* (rev. ed.). New York, NY: Association Press.

Kimball, R. A., & Byerly, J. M. (2013). To make Army PME distance learning work, make it social. *Military Review, 93,* 30-38.

Kirkpatrick, D. L., & Kirkpatrick, J. D. (2006). *Evaluating training programs: The four levels* (3rd ed.). San Francisco, CA: Berrett-Koehler.

Knowles, M. S. (1980). *The modern practice of adult education: From pedagogy to andragogy.* (2nd ed.). New York, NY: Cambridge Books.

Knowles, M. S., Holton III, E. F., & Swanson, R. A. (2015). *The adult learner.* (8th ed.). New York, NY: Routledge.

Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory into Practice, 41,* 212-260.

Lam, S., Law, Y., & Shum, M. S. (2009). Classroom discussion analysis and educational outcomes in the era of education reform. *British Journal of Educational Psychology, 79,* 617-641.

Lavitt, D. A. (1992, June). A case for training. *Training & Development, 1002,* 19-22.

Lindeman, E. C. (1961). *The meaning of adult education in the United States.* New York, NY: Harvest House.

Linell, P. (1998). *Approaching dialogue: Talk and interaction in dialogical perspectives.* Amsterdam, The Netherlands: John Benjamins.

Madden, K. K. (2010). Engaged learning with the inquiry-based question cluster discussion technique: Student outcomes in a history of economic thought course. *Southern Economic Journal, 77,* 224-239.

Mainkar, A. V. (2008). A student-empowered system for measuring and weighing participation in class discussion. *Journal of Management Education, 32,* 23-37.

Mastaglio, T., Wilkinson, J., Jones, P. N., Bliss, J. P., & Barnett, J. S. (2011). *Current practice and theoretical foundations of the after action review.* (ARI Technical Report 1290). Arlington, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. DTIC# ADA544543

McGonigal, K. (2005). Using class discussion to meet your teaching goals. *Speaking of Teaching* (The Center for Teaching and Learning, Stanford University Newsletter), *15*(1), 1-5.

Meinhart, R. M. (2014). *Seminar learning at the Army War College* (2nd ed.). (unpublished faculty paper). Carlisle, PA: U.S. Army War College.

Merriam, S. B., & Bierema, L. L. (2014). *Adult learning: Linking theory and practice.* San Francisco, CA: John Wiley & Sons, Inc.

Merriam-Webster (2014). Online dictionary available at http://www.merriam-webster.com/dictionary/, accessed on January 6, 2015.

O'Connor, K. J. (2013). Class participation: Promoting in-class student engagement. *Education, 133,* 340-344.

Pitt, R. N., & Packard, J. (2012). Activating diversity: The impact of student race on contribution to course discussions. *Sociological Quarterly, 53*(2), 295-320.

Reznitskaya, A. (2012). Dialogic teaching rethinking language use during literature discussions. *The Reading Teacher, 65,* 446-456.

Reznitskaya, A., Kuo, L., Clark, A., Miller, B., Jadallah, M., Anderson, R.C., & Nguyen-Jahiel, K. (2009). Collaborative reasoning: A dialogic approach to group discussions. *Cambridge Journal of Education, 39,* 29-48.

Roberts, S. L. (2013). The "Chalk Talk" 2.0: Using Google Docs to improve the silent discussion in social studies. *Social Studies, 104,* 130-136.

Robson, D. (2013, January 14). There really are 50 Eskimo words for 'snow'. *The Washington Post,* Health and Science. Retrieved 1/22/15 from

http://www.washingtonpost.com/national/health-science/there-really-are-50-eskimo-words-for-snow/2013/01/14/e0e3f4e0-59a0-11e2-beee-6e38f5215402_story.html

Ryve, A., Larsson, M., & Nilsson, P. (2013). Analyzing content and participation in classroom discussion: Dimensions of variation, mediating tools, and conceptual accountability, *Scandinavian Journal of Educational Research, 57*, 101-114.

Sautter, P. (2007). Designing discussion activities to achieve desired learning outcomes: Choices using mode of delivery and structure. *Journal of Marketing Education, 29,* 122-131.

School of Advanced Military Studies (SAMS). (nd). *Art of Design.* (School of Advanced Military Studies Student Text Version 2.0). Fort Leavenworth, KS: Author.

Senge, P. (1990). The fifth discipline: The art and practice of the learning Organization. New York: Doubleday.

Smart, K. L., & Featheringham, R. (2006). Developing effective interpersonal communication and discussion skills. *Business Communication Quarterly, 69,* 276-283.

Soter, A., Wilkinson, I. A., Murphy, P. K., Rudge, L., Reninger, K., & Edwards, M. (2008). What the discussion tells us: Talk and indicators of high-level comprehension. *International Journal of Educational Research, 47,* 372-391.

Strasser, G., & Titus, W. (1985). Pooling of unshared information in group decision making: Biased information sampling during discussion. *Journal of Personality and Social Psychology, 48,* 1467-1478.

Sweet, M. S., Michaelsen, L. K., & Wright, C. M. (2012). Simultaneous report: A reliable method to stimulate class discussion. *Decision Sciences Journal of Innovative Education, 6,* 483-487.

Tannen, D. (1990). *You just don't understand: Women and men in conversation.* New York, NY: Morrow.

Tatum, H. E., Schwartz, B. M., Schimmoeller, P. A., & Perry, N. (2013). Classroom participation and student-faculty interactions: Does gender matter? *The Journal of Higher Education, 84,* 745-768.

U.S. Army Command and General Staff College (USACGSC) (2005). *The CGSC Experiential Learning Model,* JA-2. Fort Leavenworth, KS: U.S. Army Command and General Staff College Faculty and Staff Development Division.

U.S. Department of the Army. (1993). *A Leader's Guide to After-Action Reviews.* (TC 25-20). Washington, D.C.: Author. Retrieved from http://www.au.af.mil/au/awc/awcgate/army/tc_25-20/tc25-20.pdf

U.S. Department of the Army. (2011). *Army Learning Policy and Systems*. (TRADOC Regulation 350-70). Washington, D.C.: Author.

U.S. Department of the Army. (2017). *The U.S. Army Learning Concept for Training and Education 2020-2040.* (TRADOC Pamphlet 525-8-2). Washington, D.C.: Author. Retrieved from http://www.tradoc.army.mil/tpubs/pams/tp525-8-2.pdf

Weaver, R. R., & Qi, J. (2005). Classroom organization and participation: College students' participation. *The Journal of Higher Education, 76,* 570-601.

Wilkinson, M. (2012). *The secrets of facilitation: The SMART guide to getting results with groups.* San Francisco, CA: Jossey-Bass.

Wise, A. F., Saghafian, M., & Padmanabhan, P. (2012). Towards more precise design guidance: specifying and testing the functions of assigned student roles in online discussions. *Education Technology Research & Development, 60,* 55-82.

Young, R. F. (2003). The first three minutes. *Proceedings of the Marketing Management Association,* 25-26.

Zhang, J. & Stahl, K. A. D. (2011). Collaborative reasoning. *The Reading Teacher, 65,* 257-260.